UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

SR-6J

MEMORANDUM

DATE: JAN 0 4 2007

SUBJECT: ENFORCEMENT ACTION MEMORANDUM - Determination of Threat to Public Health and the Environment and Selection of Non-Time Critical Removal Action at the Marina Cliffs/Northwestern Barrel Facility, South Milwaukee, Wisconsin (Site ID #05PO)

FROM: Michael Berkoff, Remedial Project Manager
Remedial Response Section II

TO: Richard Karl, Director
Superfund Division

I. PURPOSE

The purpose of this memorandum is to document the determination of an imminent and substantial threat to public health, welfare, and the environment posed by the presence of uncontrolled hazardous substances, and the removal action to be performed, at the portion of the Northwestern Barrel/Marina Cliffs Facility located near the Marina Cliffs condominium complex (referred to as "the Properties"), in South Milwaukee, Wisconsin (Figures 1, 2).

The selected response action addresses the threats posed by the presence of volatile organic compounds (VOCs) in subsurface soils associated with a barrel reconditioning operation. A group of potentially responsible parties (the "Performing Parties") is expected to enter an Administrative Settlement Agreement and Order on Consent (Settlement) agreeing to perform the response actions selected by the United States Environmental Protection Agency (U.S. EPA) for the Properties under U.S. EPA oversight. If U.S. EPA cannot reach a Settlement, it expects to issue a Unilateral Administrative Order (UAO) requiring the Performing Parties to perform the selected response action.

The selected response action will mitigate threats to public health, welfare, and the environment posed by the presence of uncontrolled hazardous substances at the Properties. These response

actions have been selected based on an Engineering Evaluation/Cost Analysis (EE/CA) investigation for the Properties, focused on the residual contamination remaining after time critical removal actions to remove surface soil contamination at the Properties.

The selected removal actions include injection of chemical oxidizers to soils at the Properties, excavation and disposal of the contaminated soil at the Properties, and use restrictions requiring that workers working at depths below three feet in the areas where subsurface contamination is present wear appropriate protective equipment and follow an appropriate health and safety plan.

The information and the removal alternatives are based on site investigation activities performed under a July 5, 2002 Administrative Order by Consent (AOC), Docket No. V-W-02-C-703. This action is classified as a non-time critical removal action.

The Northwestern Barrel/Marina Cliffs Facility is not on the National Priorities List (NPL). The removals at the Site and the Properties have been and will be performed by potentially responsible parties (PRPs).

The EE/CA report was completed on August 4, 2006, and based on that report U.S. EPA identified its proposed response actions and solicited public comments. The comment period closed on November 17, 2006, and [U.S. EPA received comments from two individuals on the proposed actions.] The EE/CA report analyzes all the confirmation sampling data collected as part of previous removal activities and pilot studies at the Properties and incorporates this data into a formal Streamlined Risk Evaluation (SRE). Upon completion of the removal actions the excess lifetime cancer risk level at the Properties will be lower than one in a million for residential use, the Hazard Index will be just above one (this is discussed in the Removal Site Evaluation of this Action Memorandum) for residential use, and all Applicable or Relevant and Appropriate Requirements (ARARs) are expected to be met.

II. SITE CONDITIONS AND BACKGROUND

The CERCLIS ID number for the Facility is WID981095995

A. Removal Site Evaluation

An EE/CA Report for the Properties was prepared by Conestoga Rovers & Associates (CRA), on behalf of the Performing Parties pursuant to the July 5, 2002, AOC. U.S. EPA approved the EE/CA Report, with minor modifications, on September 15, 2006.

Based on the results of initial EE/CA investigations conducted in 2003, the Performing Parties performed a time critical removal action to excavate and remove contaminated surface soil under an AOC issued on May 4, 2004, as described in detail in Section II.E.

The EE/CA report presents the results of EE/CA sampling activities completed at the Properties, the time critical removal activities performed at the Properties in 2004, and the 2005 pilot test performed to evaluate the effectiveness of chemical oxidation (ChemOx) in treating subsurface VOCs. The EE/CA Report also presents an SRE of the analytical data collected; and recommendations for additional removal actions.

The SRE did not include in the analysis sampling data for soil that had been either excavated in the time critical removal or treated during the pilot study. The Performing Parties presented their conclusions in the SRE section of the non-time critical EE/CA for the Properties. The SRE conducted in the time critical EE/CA for the Properties focused on three primary potential exposure pathways:

1. Potential current recreational user exposure to surface soils and surface water; and
2. Potential future hypothetical residential exposure to soils and garden produce.
3. Potential future hypothetical exposure to construction or utility workers during soil excavation around the condo area.

The first two exposure pathways were addressed in the time critical removal actions of 2004. The non time-critical EE/CA addresses the potential exposure to construction and utility workers.

As part of the SRE, it was determined that many COPCs, which contributed to the estimated cancer risks and hazard indices, were present in soils at the Properties only at levels below background, and therefore, are not site-related. These non-Properties-related COPCs in surface and subsurface soils include arsenic, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene. The Properties-related COPCs in surface soil include only aroclor-1254, iron and manganese. In both the surface and subsurface soil, aroclor-1254 is at levels less than 1 ppm, the MCL, where still detected.

Iron and manganese are site-related COPCs that are considered unrelated to the historic barrel recycling contamination at the Facility. This determination was made because these contaminants do not follow the distribution pattern of the other site-related COPCs. At the Properties, iron and manganese are fairly localized along roadways which suggest that they come from automotive emissions. This issue is discussed in Section 2.6.6.1 of the EE/CA which addresses the exposure risks to current residents based upon surface soil contaminants. The Hazard Index for the surface soil is above one due to the presence of arsenic, iron and manganese. Iron and manganese are at high levels at background concentrations, so the slightly elevated levels for these elements found in a small number of samples has raised the Hazard Index above 1. Because, these elevated levels may be attributable to non-site related anthropogenic sources like automobile emissions as the two locations, with high levels of contaminant, in the 0"-6" horizon of soil, occur along roadways.

EPA can use its discretion as it makes risk management decisions in regards to non-site related contamination from anthropogenic sources or potentially hazardous elements that have high background concentrations. This is based upon EPA guidance on background data as it relates to risk evaluation and management. EPA has considered the current data on the iron, manganese, and arsenic levels at the Properties and does not feel that the performing parties need to address those elements at this time.

U.S. EPA has evaluated soil data set as it relates to the estimated cumulative lifetime cancer risks, and hazard indices (HI) for both the current and the hypothetical future residential scenarios. From this, U.S. EPA has concluded that additional activities, as a Non-Time Critical Removal Action, are required to be protective of human health and the environment. Specifically, the Non-Time Critical Removal Action activity is considered necessary to address the risk posed by soil COPCs to industrial workers. A summary of the estimated cumulative lifetime cancer risks and HI for both residential and industrial worker exposure scenarios is detailed in the non-time critical EE/CA for the Properties dated August 4, 2006. Figure 3 shows those areas of the Property where subsurface soils exceed VOC risk-based Region IX Preliminary Remediation Goals (PRGs) for industrial workers, and therefore further action is required.

Properties-Related COPCs in subsurface soil include benzene, PCE, TCE, vinyl chloride and aroclor-1254. As stated above, aroclor-1254 is at levels below 1ppm when it is detected. The VOCs are present in distinct pockets of subsurface soils at the Properties. The contamination is below the parking area and adjacent to two buildings and are the primary focus of this non-time critical removal action. The subsurface soil in this area contains a great deal of utilities, so U.S. EPA has encouraged the Performing Parties to explore alternative remediation technologies in the EE/CA process. The Performing Parties conducted, under U.S. EPA supervision, a pilot study testing the ability of ChemOx as a response action for these contaminated soils. Confirmation sampling verified that ChemOx can be a successful method for treating contaminated soils at the Properties.

The proposed Non-Time Critical Removal Action activities will consist of injections of ChemOx in the affected areas. ChemOx is a chemical that converts hazardous contaminants into less toxic and hazardous breakdown products through a chemical oxidation process. These breakdown products, typically vinyl chloride, continue to break down into less hazardous compounds over time. This decision to use ChemOx is supported by the results of a previous in-situ chemical oxidation pilot study. ChemOx injections were made in three discrete contaminated areas in the Marina Cliffs Condo property, the effects of which were observed over the following months by sampling the treated soil. The sampling results suggest that in-situ chemical injections can reduce the levels of COPCs at the Properties, when the spacing of the injections is three feet apart (Figure 4). U.S. EPA determined that the in-situ method was preferable to excavation of the contaminated soils, because excavation would be very difficult logistically, very disruptive to residents, and could have threatened the integrity of the buildings. Preliminary results from the pilot study show in-situ chemical injections to be an effective method for treating these COPCs.

Though the reductions varied, contaminant levels decreased in all areas.

Groundwater is not currently a source of drinking water in the vicinity of the Site or the Properties, which are served by a public drinking water system so no complete direct pathway currently exists for potential exposure to groundwater. Additionally, U.S. EPA does not expect groundwater to be a future source of drinking water at either the Site or the Properties. Sampling results indicate that Target Compound List (TCL) VOC, TCL semi-volatile organic compounds, TCL pesticides/PCB's, and Target Analyte List inorganic groundwater concentrations were detected infrequently and at low concentrations at monitoring wells MW-8, MW-9, and MW-10 at the Properties. Some of the VOC levels may be breakdown products of COPCs from the pilot study.

At the Properties, the contaminant levels that are found in the ground water are below the MCL's. Additionally, indoor air sampling data had not found the presence of COPCs in the basements of the units adjacent to the contaminated subsurface soil. Based upon those two observations, so there does not appear to be any risk of vapor intrusion due to any groundwater source from the Properties. The closest areas of elevated contaminant levels in the groundwater are found on the 13 acre property adjacent to the Properties. The soil in the area is densely packed clay, so there is little migration of groundwater in the area. Additionally, the Properties are up gradient of the potential sources on the 13 acre property. Given these geologic features of the area, migration of contaminants, via groundwater, from the 13 acre property to the condo area is unlikely.

B. Physical Location and Site Characteristics

The 13-acre parcel and the Properties are located on the shoreline of Lake Michigan in the city of South Milwaukee, Wisconsin (NW ¼, NW ¼, Section 13, Township 5N, Range 22E) near the intersection of Marina Road and Fifth Avenue. The locations of the Facility (latitude 42/53'59" N, longitude 87/50'55" W) and the Properties are shown on Figure 1. Generally, the Facility is bounded to the east by Lake Michigan, to the west by Fifth Avenue, to the north by the South Milwaukee Wastewater Treatment Plant, and to the south by Marina Drive (Figure 2). Northwestern Barrel Company's barrel reconditioning operations were conducted on an approximately 18-acre parcel of property.

U.S. EPA initially focused on the 13-acre eastern portion of the property, which is owned by Towne Realty, Inc. and which is where most of the barrel reconditioning operations took place. The 13-acre Site area included the ravine, lake bluff, and upland areas and was the focus of Time Critical and Non-Time Critical Removal Actions conducted pursuant to 1995 and 1998 Unilateral Administrative Orders (Docket Nos. V-W-95-C-313 and V-W-98-C-486) and a 2001 Administrative Order on Consent (Docket No. V-W-01-C-630). The remaining 5 acres, including the residential properties located immediately west of the Site as well as the right-of-way owned by the City of South Milwaukee located immediately south of the Site (the "Properties"), are the

focus of the EE/CA Report which is being prepared pursuant to the July 5, 2002 AOC.

The Facility is municipally zoned for residential occupancy and land use in the vicinity of the Facility is primarily residential. The Facility is bordered to the south and the west by residential areas consisting of mostly apartment and condominium buildings. Residences in the vicinity of the Facility are serviced with a municipal water supply that utilizes Lake Michigan as a source of drinking water.

General stratigraphy in the vicinity of the Facility is characterized as approximately 150 feet of silty clay glacial drift overlie Silurian dolostone bedrock. The drift was deposited during the Woodfordian substage of the Wisconsinan glaciation. The principal stratigraphic unit in the vicinity of the Facility is silty clay till of the Oak Creek formation. The silty clay till has a very low permeability, which acts as an aquitard limiting the potential for downward groundwater migration.

In Wisconsin, the low-income average is 28% and the minority average is 13%. To meet the Environmental Justice (EJ) concern criteria, the area within 1 mile of the Site must have a population that's twice the state low-income average percentage and/or twice the state minority average percentage. That is, the area must be at least 56% low income and/or 26% minority. At this site, the low-income is 26% and the minority is 8% as determined by ArcView EJ Analysis. Therefore, these demographic conditions indicate that an EJ priority does not exist for the community around the site (See Attachment II).

C. History

The Northwestern Barrel Company operated a barrel reconditioning facility on the Facility from approximately 1941 until 1964. Northwestern Barrel Company reconditioned both steel and wood barrels. Used barrels were received from a wide variety of companies for cleaning and reconditioning. The operations included on-site handling, washing, and refurbishing of drums and barrels. The residuals from these operations were disposed of at the Facility. Northwestern Barrel Company then sold the reconditioned drums.

The entire Northwestern Barrel/Marina Cliffs Facility is defined as an 18 acre parcel of land bounded by the lakefront to the east, 5th Avenue to the west, Marina Road to the south and the South Milwaukee Wastewater Treatment Plant to the north. Towne Realty owns the 13-acre parcel that fronts Lake Michigan, which it purchased in 1982. The condominiums on the 5-acre portion of the Facility are privately owned and the common property is owned by the Marina Cliffs Condominium Association. The condominium buildings were constructed between 1965 and 1969. The right of way immediately south of the condos was conveyed by Towne Realty to the City of South Milwaukee in April 1994.

D. Release or threatened release into the environment of a hazardous substance, or pollutant or contaminant

As described below the majority of contamination at the Property was removed under a previous time critical removal action. The EE/CA documents the presence of residual subsurface VOCs in a few small areas around the condominium buildings that still remain after prior excavation and disposal of contaminated surface soil. For the reasons described in Section II A, these areas continue to present releases and threats of releases of hazardous substances into the environment.

E. Other Actions to Date

Various historical sampling has been conducted at the Properties. This has included surface soil sampling conducted by the Wisconsin Department of Health and Family Services (WDHFS) on July 11, 1997 and background sampling in November 1996 and in December 2000, as part of the EE/CA investigation for the Site area. Non-Time Critical Site-Wide Evaluation investigation activities were initially conducted by the Performing Parties at the Site in March and June/July 1998. Additional subsurface soil samples were collected at one of the residential properties located immediately west of the Site by representatives of the property owners in December 1999.

In response to a request from the Marina Cliffs Condominium Association, a total of six boreholes (i.e., BH-36 to BH-41) were advanced and surface/subsurface soil samples were collected south of Marina Cliffs Condominium Building Nos. 3 and 4 on March 19, 2002. These activities were done in accordance with a U.S. EPA-approved Scope of Work. This allowed for the completion of surface water drainage modification activities in this area, by the Association, in the spring of 2002.

Soil sampling was performed from December 2002 to February 2003, as part of the EE/CA to determine the extent to which releases of contamination (and thus the boundary of the Facility) extended beyond the 13 acre parcel. After analyzing the findings, U.S. EPA included the 5 acre parcel, adjacent to 5th Avenue and Marina Road, as a part of the Facility and called this area the "Properties." The Properties are defined to include a City right-of-way just south of the 13 acre parcel and the adjacent Marina Cliffs condominium complex, which was constructed within the original property boundary owned by Northwestern Barrel.

A uniform 75 foot grid was established over the Properties (31 borehole locations). Additional borings were added in the Marina Cliffs condominiums area to further define the extent of contamination. Results at most of the surface sampling locations indicated that compounds of potential concern (COPC) were at low concentrations, similar to background. The only notable exceptions were at four locations primarily around the Marina Cliffs condominiums and a small area near the Bay Heights complex. The maximum PCB concentration was 22 parts per million (ppm). Lead was also detected in one surface sample at 803 ppm within the City of South

Milwaukee Right of Way. Similarly, sampling results at most of the subsurface locations, indicated that COPCs were at low concentrations, similar to background.

Polychlorinated biphenyls (PCBs) and lead, however, were detected at elevated levels around the Marina Cliffs condominiums at a depth of 2 to 4 feet. Based on those sample results, U.S. EPA determined in a May 4, 2004, Action Memorandum that regardless of the measures evaluated to address other contamination on the Properties, any cleanup approach would require excavation of surface and shallow soils containing lead in excess of 400 ppm and PCBs in excess of 1 ppm. U.S. EPA. Past and current contamination at the Properties is presented in Figure 5.

The focus of the EE/CA and this Action Memorandum for a non-time critical removal action is the VOC contamination in soil at depths of 4 to 14 feet at the Properties, because the lead and PCBs were addressed in the time critical removal action. The VOC contamination is in two spots under the parking lot, between buildings 1 and 2, and in a one spot north of building 1 (Figures 4, 5). The EE/CA details the risks and cleanup options associated with these subsurface soils, soil gas and groundwater. In addition to the recent and past soil investigations, the EE/CA includes data from a chemical injection pilot study conducted at the condo property during 2005.

Based on the results of initial EE/CA investigations in 2002 and 2003, the Performing Parties agreed to conduct a time critical removal actions to excavate contaminated surface soils at the Properties. The Performing Parties excavated the contaminated soils in May through July, 2004, and sampling confirmed that they removed all shallow soils containing lead in excess of 400 ppm and PCBs in excess of 1 ppm for disposal. The locations and depths of the soil removal are shown in Figure 5. The screening level of 400 ppm of lead has been derived by U.S. EPA to be protective of a residential child using the Integrated Exposure Uptake Biokinetic (IEUBK) Model for lead in children. Specifically, the time critical removal included:

1. Completion of a detailed topographical survey of the ground surface in the vicinity of the excavation areas at the Marina Cliff Condominium Association (MCCA) property and the Bay Heights Owners Association (BHOA) property by a qualified Wisconsin land surveyor.

2. Completion of a detailed inventory and photographic documentation vegetation in the vicinity of the excavation areas at the MCCA property and the BHOA property by an independent, qualified landscape professional.

3. Implementation of a building inspection program including the completion of a detailed exterior inspection including the completion of a detailed exterior inspection including photographic documentation and elevation surveying of the foundation walls of Buildings Nos. 1 and 3 of the MCCA property and the garage at BHOA property. In addition, and interior inspection of the foundations at select units of Building Nos. 1 and 3 of the MCCA was completed. The building inspection program was completed by an

independent, qualified structural engineering professional.

4. Completion of a detailed inspection program by the appropriate utility service providers to identify the location of all underground services in the vicinity of the excavation areas, all of which were marked on the ground surface prior to excavation activities.

5. Implementation of programs to monitor the air quality, noise and vibration impact during the excavation and backfilling at the condo area.

6. Excavation and removal of contaminated soils around condominium buildings, which were characterized before disposal. The excavated soils were primarily contaminated by Lead and PCB's. The impacted VOC areas, at the properties adjacent, were not addressed as a part of this excavation.

7. Implementation of surface water controls to prevent infiltration of water into the excavation areas in addition to the dewatering of accumulated precipitation to prevent the water-borne spread of contaminants.

8. Collection and analysis of remaining soil at the base and sidewalls of the excavation to document that the appropriate cleanup standards had been met.

9. Restoration of the previously vegetated areas in the vicinity of the excavation at the MCCA and the City of South Milwaukee's right-of-way. This activity included back-filling with clean soil, compaction of this soil, and the re-vegetation of these areas.

10. Implementation of a 1-year follow-up building inspection program including the completion of a detailed exterior inspection of the MCCA property and parts of the Bay Heights Owners Association property.

As part of the EE/CA's evaluation of cleanup alternatives, the Performing Parties proposed a ChemOx study which was performed on VOC impacted soils at the Properties to evaluate the effectiveness of that technology. Initially, a ChemOx bench-scale treatability study was performed on representative subsurface soil samples collected from the Properties. The details and results of the bench-scale treatability study were presented in the 2004 U.S. EPA-approved EE/CA Work Plan Addendum.

The in-situ chemical oxidation (ISCO) pilot study was implemented in November and December 2004 at three discrete areas at the Properties that had elevated concentrations of VOCs in the subsurface soils. Complete details of the study, including information on the chemical used, is available in the August 4, 2006 non-time critical EE/CA and in a summary report prepared by BMS, Inc. dated January 20, 2005. 1,079 injection points were completed to treat approximately 4,471 cubic yards of VOC-impacted soils with 22,676 gallons of BIOX© remedial fluids.

Certain areas were treated using 3-foot injection point grid spacing and other areas were treated using 4-foot injection point grid spacing.

Prior to implementation of full-scale ISCO pilot study, drain tile depressurization systems were installed in Buildings No. 1 through 4 at the Properties. The sumps in each building were sealed in accordance with the protocols provided in the U.S. EPA-approved EE/CA Work Plan Addendum. The drain tile depressurizations systems were installed as a precautionary measure to prevent or minimize potential migration of impacted soil gas to indoor air due to the pilot study.

Groundwater, soil gas, and indoor air sampling and analyses were performed immediately prior to and subsequent to the pilot study. As discussed in the EE/CA Work Plan Addendum, the groundwater data were collected to determine any impact the BIOX© injection may have on groundwater. As also discussed in the EE/CA Work Plan Addendum, the soil gas and indoor air data were collected to assess the effectiveness of the ISCO in reducing soil gas concentrations in subsurface soils, and to ensure that concentrations of VOCs in indoor air remained at or below acceptable levels.

F. Current actions

The Performing Parties submitted an EE/CA Report in August, 2006. U.S. EPA approved the EE/CA Report, with minor modifications, on September 15, 2006. The EE/CA Report has detailed the remaining contamination at the Properties and discusses cleanup alternatives. The EE/CA Report and a proposed plan describing the removal actions selected in this Action Memorandum were released for a thirty day public comment which ended on November 17, 2006. U.S. EPA also held a public meeting on November 2, 2006. U.S. EPA's responses to comments received at the public meeting and in writing are provided in the Responsiveness Summary (Attachment III) and have been incorporated into this Action Memorandum as appropriate.

The Performing Parties are also conducting work at the 13 acre parcel adjacent to the Properties. Beginning in 1997, the Responsible Parties dug up, stockpiled and disposed of nearly 9,000 tons of waste and soil from the disposal pits and surrounding area on the Towne Reality area. This work was followed in 1998 by additional excavation and off-site disposal of more than 170,000 tons of waste, debris and contaminated soil from the ravine, lake bluff and upland area. Cleanup continued in spring 2004 when two small areas of soil were excavated and erosion control measures were put in place on the slope to the lake. In 2005, the upland area was regraded and reseeded to improve drainage. Eroded areas on the east slope were filled with soil. In 2006, a small area of subsurface soil in the upland area was treated to neutralize remaining chemicals. Ground water will be monitored over the next few years to confirm that any leftover chemicals remain at safe levels. EPA expects that work on Towne's property will be complete in the spring of 2007, after the shoreline wetland is replanted and additional efforts are made to minimize erosion on the east slope.

G. State and Local Authorities' Roles

Both the Wisconsin Department of Natural Resources and the Wisconsin Department of Public Health have been active participants in the EE/CA process. All plans and reports have been reviewed by State personnel. To the extent practicable, all State ARARs identified in prior removal actions will be followed. WDPH and WDNR will continue to advise U.S. EPA.

The City of South Milwaukee has historically been involved primarily due to residents concerns during the time critical removal actions. The City is also involved in outlining a strategy to redevelop the Site once the removal actions in this Action Memorandum are completed.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

A removal action is necessary in two small areas to abate the threat to public health, welfare or the environment posed by the release and potential release of hazardous substances. The NCP, 40 C.F.R. Section 300.415(b)(2), provides eight specific criteria for evaluation of a threat and the appropriateness of a removal action. Observations documented during the investigation of the Properties indicate that the Properties meet the following criteria for a non-time critical removal action:

a. Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances, pollutants or contaminants

This factor is present at the Properties due to the presence of elevated levels of VOCs in two areas at the Properties which could be encountered by utility workers or construction workers excavating in those areas.

d. The unavailability of other appropriate federal or state response mechanisms to respond to the release

This factor supports the actions required by this Memorandum because State and local authorities lack the financial resources to address the threats to human health and the environment.

IV. ENDANGERMENT DETERMINATION

Given the current conditions at the Properties and the nature of the hazardous substances on-site, actual or threatened releases of hazardous substances from the Properties, if not addressed by implementing and completing the response actions selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, welfare, or the environment.

The possibility of further releases of the hazardous substances presents a threat to the nearby population and the environment via the exposure pathways described in sections II and III, above.

V. PROPOSED ACTIONS

Hazardous substances are located near a residential area and must be addressed. The selected removal actions at the Properties would eliminate any remaining imminent and substantial threats to human health, welfare, or the environment, as outlined in this Memorandum.

U.S. EPA has determined that the following response actions are appropriate to mitigate threats posed by the presence of hazardous substances at the Properties:

1. Develop and implement a site-specific workplan including a proposed time line;
2. Develop and implement a site-specific health and safety plan;
3. Provide site security measures during the response activities which may include, but not be limited to, security guard service and fencing;
4. Conduct In-situ Chemical Oxidation treatments to areas that still have contaminant levels above the remedial goals for this site with the injection points spaced at a maximum of 3 feet apart;
5. Operate the drain tile depressurization systems installed in Buildings No. 1 through 4 at all times the In-situ Chemical Oxidation is active;
6. Perform confirmatory sampling to determine the degree of success of the In-situ Chemical Oxidation treatment; and
7. Implement permanent and effective use restrictions on the impacted area as appropriate, based upon review of the post-injection sampling. If necessary, these restrictions may require that any excavation deeper than 3 feet below ground surface be performed under a health and safety plan addressing the risks identified in the EE/CA Report and that any workers working at depths of 10 feet or more below ground surface must wear the appropriate level of personal protection against the risks identified in the EE/CA Report. The deed restrictions should also provide that monitoring wells on the Properties cannot be removed or disturbed without approval from U.S. EPA.

It is estimated that the cost to the Performing Parties is $322,000 and will take 5 months to complete.

All hazardous substances, pollutants or contaminants removed off-site pursuant to this removal action for treatment, storage or disposal shall be treated, stored, or disposed of at a facility in compliance, as determined by U.S. EPA, with the U.S. EPA Off-Site Rule, 40 C.F.R Section 300.440, 58 Federal Register 49215 (Sept. 22, 1993).

The removal action will be taken in a manner not inconsistent with the NCP. Post-removal site

control, consistent with the provisions of section 300.415(l) of the NCP, will be provided through the institutional controls described above. U.S. EPA anticipates that after implementation of this removal action, there will be no need for post-removal site control beyond the institutional controls.

All ARARs of federal and state law will be complied with, to the extent practicable. A Federal ARAR determined to be applicable for the site is the Off-Site Rule. A state ARAR determined to be applicable for the Properties is the Subtitle G: Waste Disposal Regulations. Any additional federal and state ARARs will be addressed to the extent practicable.

The response actions described in this Memorandum directly address actual or threatened releases of hazardous substances, pollutants or contaminants at the Properties which may pose an imminent and substantial endangerment to public health, welfare, or the environment. These response actions do not impose a burden on the affected property disproportionate to the extent to which that property contributes to the conditions being addressed.

The selected response action represents the best combination of effectiveness, implementability and cost to address the residual contamination at the Properties. The EE/CA Report provides a more detailed comparison of the selected alternative and other alternatives considered that supports the selection of this response action.

VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

A delay or inaction at the Properties may result in an increased likelihood of direct human contact with hazardous substances. Since the Properties are easily accessible, the various threats to human health and/or the environment pose a serious threat to the local population.

VII. OUTSTANDING POLICY ISSUES

No significant policy issues are associated with the Northwestern Barrel/Marina Cliffs Facility.

VIII. ENFORCEMENT

The Performing Parties at this Site and Properties are identified, and U.S. EPA expects that they can and will perform the selected response actions properly and promptly. Those Performing Parties will be subject to an enforcable agreement to complete the response actions selected for the Properties by U.S. EPA.

IX. RECOMMENDATION

This decision document represents the selected non-time critical removal action for the Properties at the Northwestern Barrel/Marina Cliffs Facility developed in accordance with CERCLA, as amended, and is not inconsistent with the NCP. This decision is based on the Administrative Record for the site (see Attachment I). Conditions at the Properties meet the criteria of Section 300.415(b)(2) of the NCP for a removal action, and I recommend your approval of the proposed removal action. You may indicate your decision by signing below.

APPROVE: _____ DATE: 1/4/09
for Richard C. Karl
Director, Superfund Division

DISAPPROVE: _____ DATE: _____
Richard C. Karl
Director, Superfund Division

Attachments: I. Administrative Record
II. Region 5 Superfund EJ Analysis
III Responsiveness Summary

cc: D. Chung, U.S.EPA, 5202G
M. Chezik, U.S. Department of the Interior, w/o Enf. Addendum
A. Walden, WDNR, w/o Enf. Addendum

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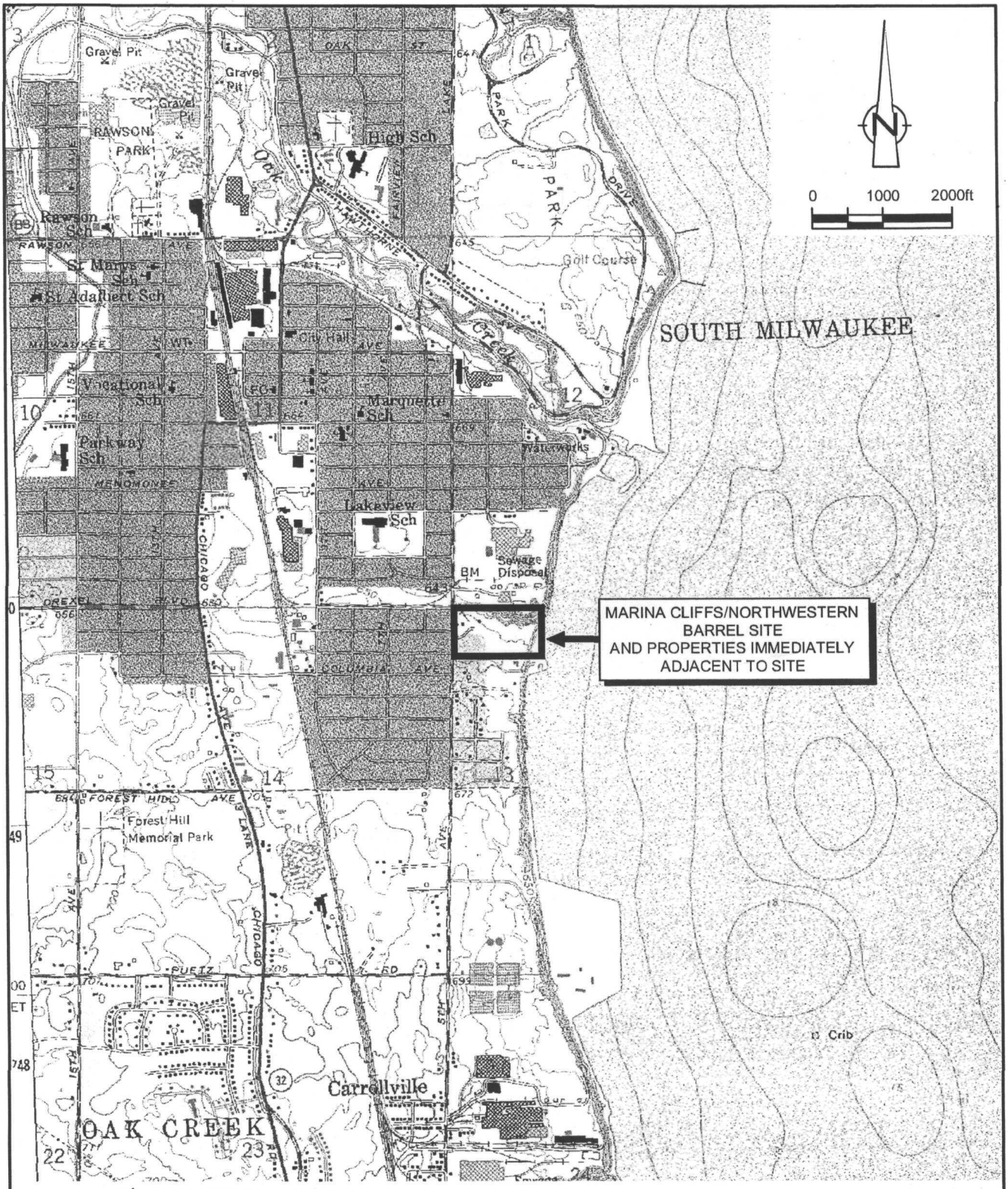
NOT RELEVANT TO THE SELECTION OF THE REMOVAL ACTION



SOURCE:
SOUTH MILWAUKEE, WISCONSIN
U.S.G.S. QUADRANGLE MAP

QUADRANGLE LOCATION
WISCONSIN

figure 1

SITE LOCATION
PROPERTIES IMMEDIATELY ADJACENT TO MARINA CLIFFS/NORTHWESTERN BARREL SITE

South Milwaukee, Wisconsin

08326-00(PRES024)GN-WA001 DEC 19/2006

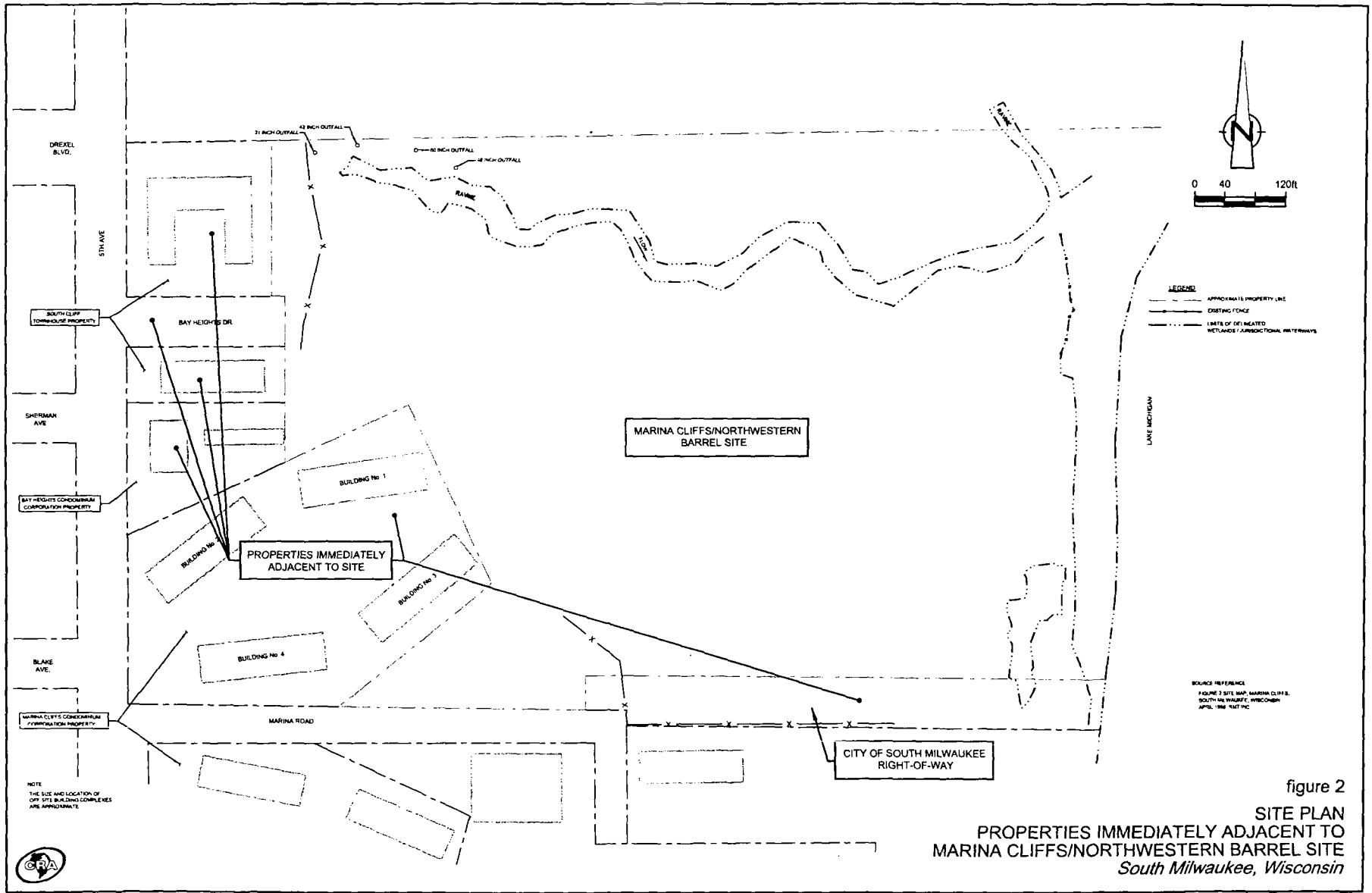


figure 2

SITE PLAN
PROPERTIES IMMEDIATELY ADJACENT TO
MARINA CLIFFS/NORTHWESTERN BARREL SITE
South Milwaukee, Wisconsin

08326-00(PRES024)GN-WA002 DEC 19/2006

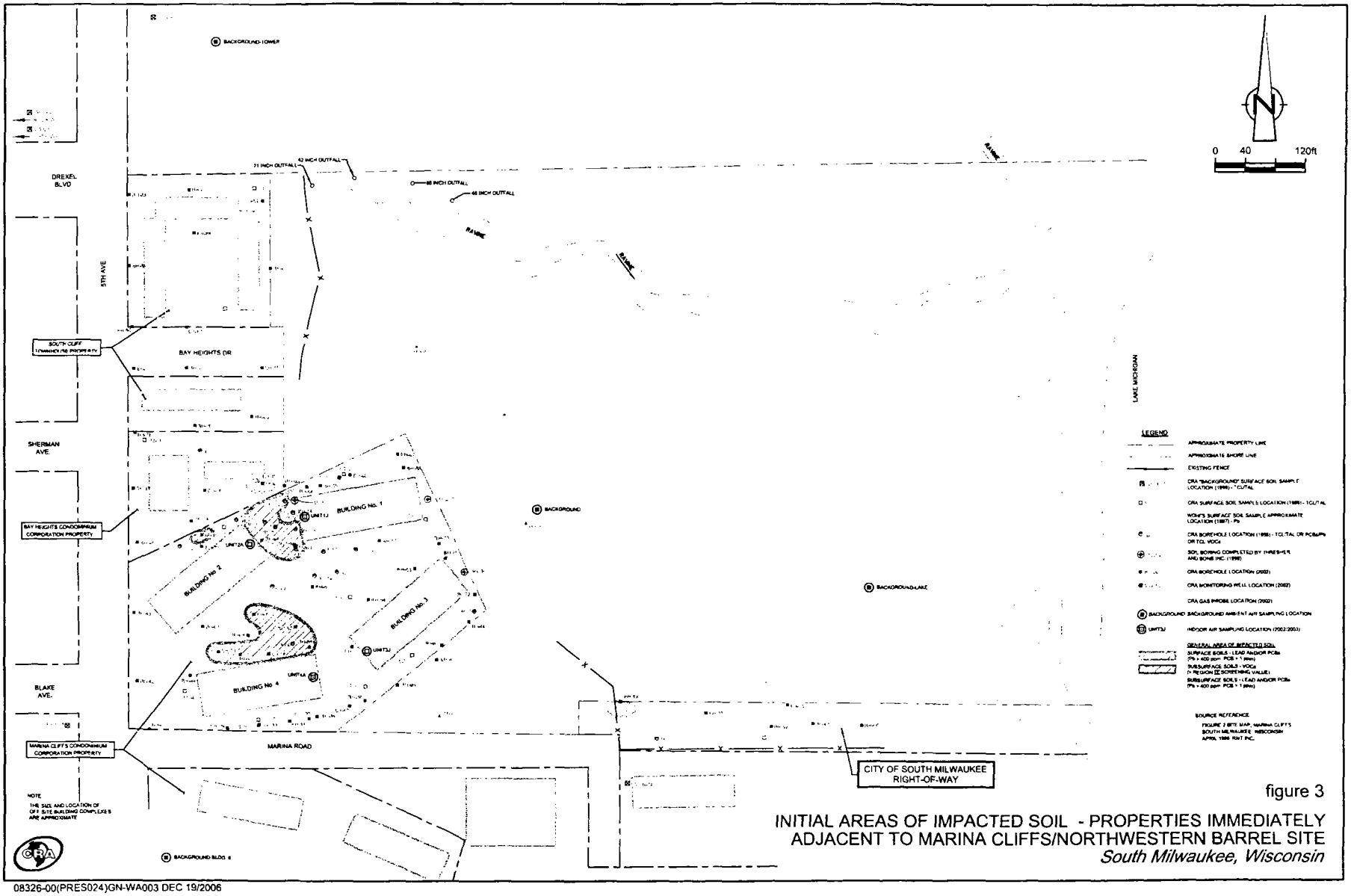


figure 3

INITIAL AREAS OF IMPACTED SOIL - PROPERTIES IMMEDIATELY ADJACENT TO MARINA CLIFFS/NORTHWESTERN BARREL SITE

South Milwaukee, Wisconsin

08326-00(PRES024)GN-WA003 DEC 19/2006

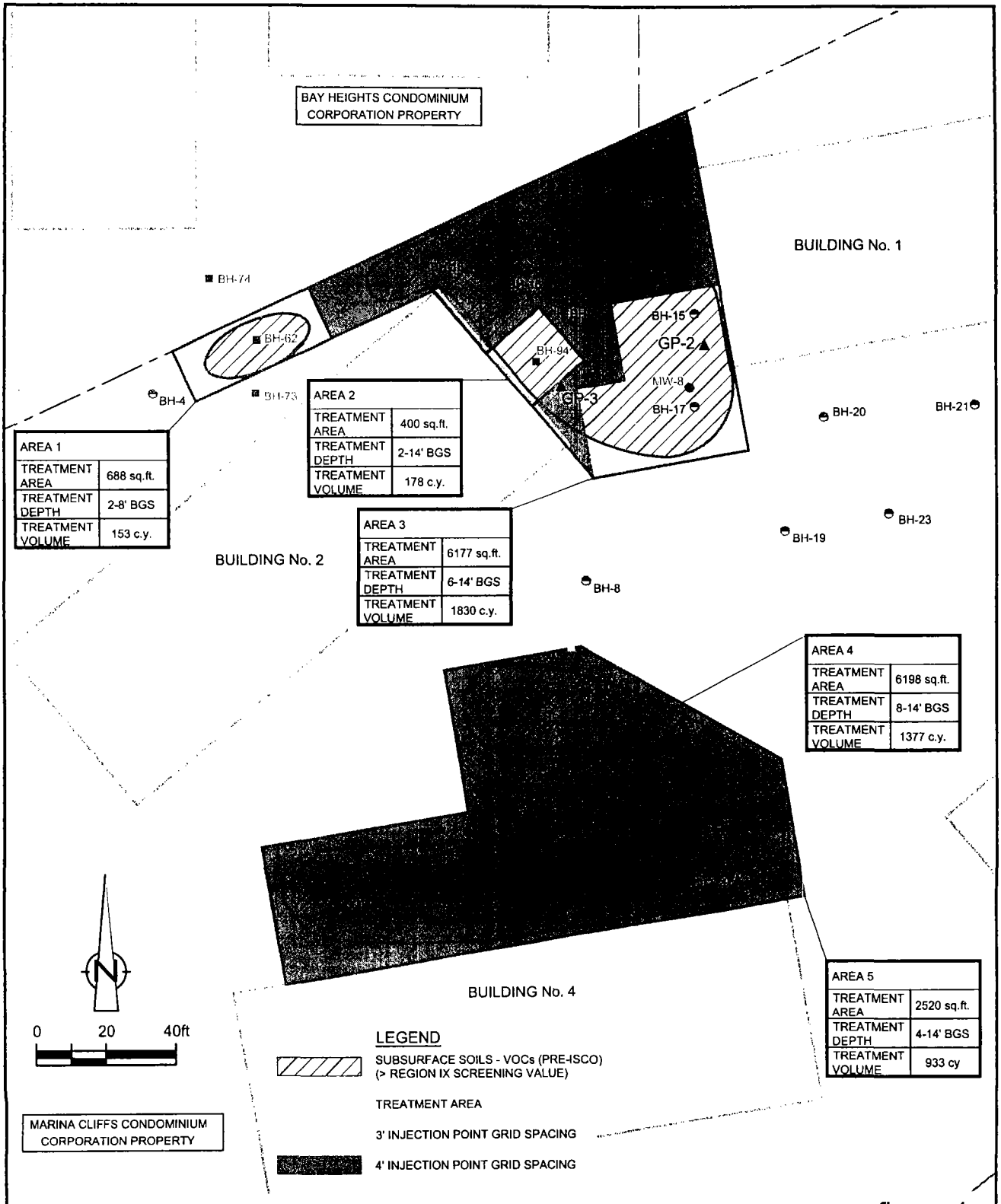


figure 4

ISCO PILOT TEST INJECTION POINT GRID SPACING PROPERTIES IMMEDIATELY ADJACENT TO MARINA CLIFFS/ NORTHWESTERN BARREL SITE

South Milwaukee, Wisconsin

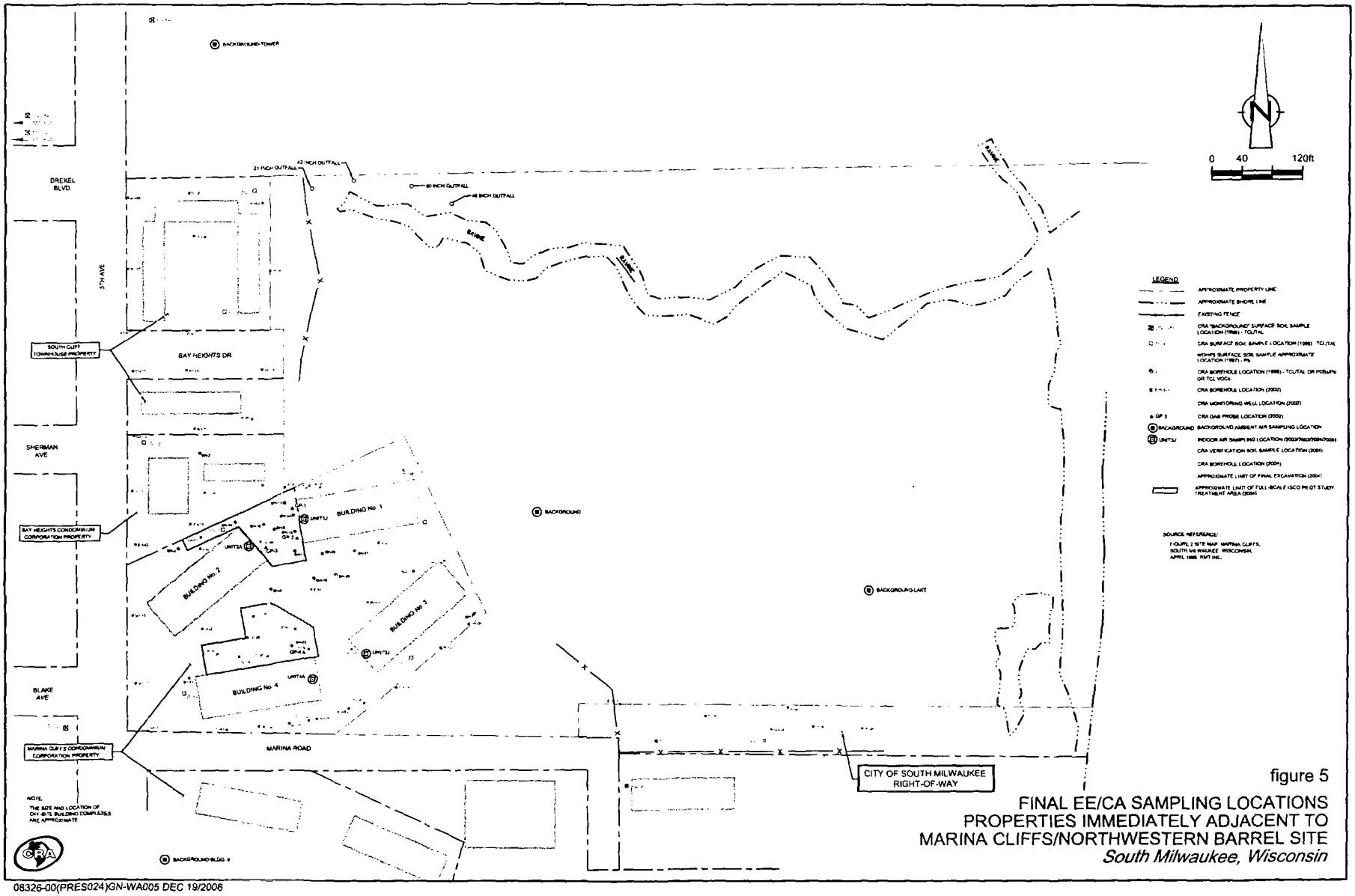


figure 5

FINAL EE/CA SAMPLING LOCATIONS
PROPERTIES IMMEDIATELY ADJACENT TO
MARINA CLIFFS/NORTHWESTERN BARREL SITE
South Milwaukee, Wisconsin

08326-00(PRES024)GN-WA005 DEC 19/2006

ATTACHMENT I

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL ACTION

ADMINISTRATIVE RECORD
FOR
MARINA CLIFFS/NORTHWESTERN BARREL SITE
ELKHART, ELKHART COUNTY, INDIANA

UPDATE
DECEMBER 20, 2006

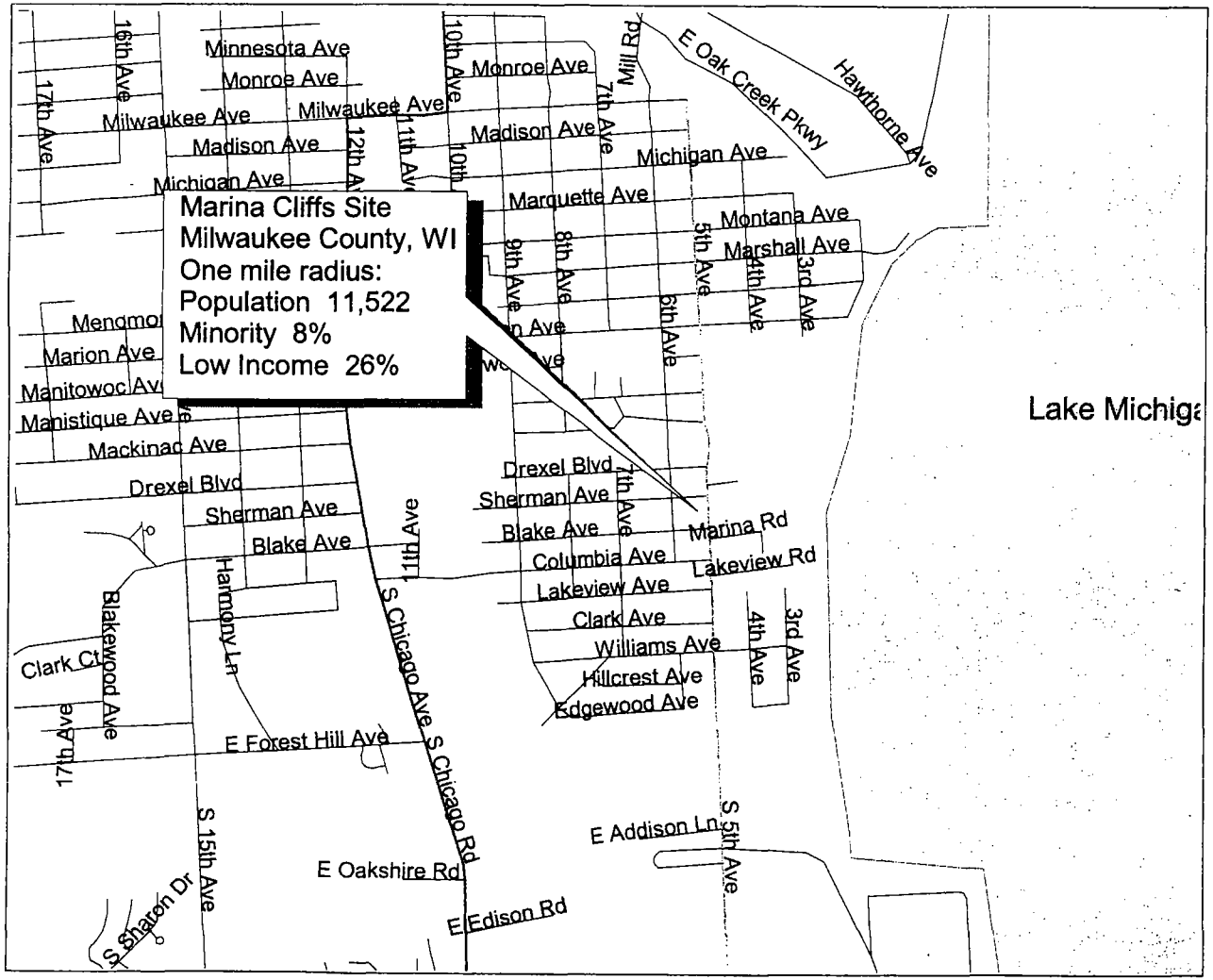
NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
1	08/00/06	Conestoga-Rovers & Associates	U.S. EPA	Engineering Evaluation/ Cost Analysis (EE/CA) for Properties Immediately Adjacent to the Marina Cliffs/Northwestern Barrel Site	223
2	09/15/06	Berkoff, M., U.S. EPA	Roberts, E., Conestoga-Rovers & Associates	Letter re: U.S. EPA Approval, w/ Modifications, of the August 4, 2006 Engineering Evaluation/ Cost Analysis (EE/CA) Report for the Marina Cliffs/Northwestern Barrel Site	4
3	11/10/06	Roberts, E., Conestoga-Rovers & Associates	Berkoff, M., U.S. EPA	Letter re: Monthly Progress Report for October 2006 for the Marina Cliffs/Northwestern Barrel Site	3
4	00/00/00	U.S. EPA	U.S. EPA	Action Memorandum **(PENDING)**	

ATTACHMENT II

REGION 5 ENVIRONEMENTAL JUSTICE ANALYSIS

Region 5 Superfund EJ Analysis

Marina Cliffs Site South Milwaukee,WI



State of Wisconsin averages:
Minority: 13%
Low Income: 28%

U.S. EPA Region 5
Environmental Justice Case Criteria
for State of Wisconsin

Minority: 26% or greater

Low Income: 56% or greater

Date of Map: 12/1/06

Source of Map: Census 2000 Database/
ArcView 3.0

ATTACHMENT III

RESPONSIVENESS SUMMARY
For Northwestern Barrel/Marina Cliffs Superfund Site

This Responsiveness Summary provides both a summary of the public comments U.S. EPA received on the Proposed Plan for the residential properties (the Properties) at the Northwestern Barrel Superfund Site and U.S. EPA=s responses to those comments. The Proposed Plan was released to the public on October 18, 2006 and the public comment period ran from October 18, 2006 through November 17, 2006. Wisconsin Department of Natural Resources (WDNR) provided support by commenting on the draft Proposed Plan and participating in the presentation at the public hearing. U.S. EPA held a public hearing regarding the Proposed Plan on November 2, 2006, at the City Hall Council Chambers in South Milwaukee, Wisconsin. WDNR and Wisconsin Department of Health and Family Services assisted with the presentations and responded to questions

Two individuals made comments on a number of issues during the public hearing, and they submitted similar comments in writing during the hearing. Copies of the comments are included in the Administrative Record for the Site. U.S. EPA carefully considered these comments prior to selecting the final response action for the Site as documented in the Action Memorandum.

This Responsiveness Summary contains a summary of the comments, grouped by the type of issue raised, and U.S. EPA's responses.

I. QUESTIONS ABOUT ADJACENT PROPERTY

Commenters raised questions about the cleanup activities at the vacant 13-acre portion of the Site that is adjacent to the Marina Cliffs Condominium property. This adjacent property was formerly occupied by the Northwestern Barrel recycling facility. The commenters' concerns were about how future development at the adjacent property would impact the Marina Cliffs Condominium property. Even though concerns and comments regarding this 13-acre parcel do not directly pertain to the cleanup decision for the residential property, it may be useful for readers to know the status of the cleanup efforts, and U.S. EPA's jurisdiction in future matters of redevelopment.

Response: Beginning in 1997 under U.S. EPA and WDNR supervision, contractors for the group of potentially responsible parties dug up, stockpiled and disposed of nearly 9,000 tons of waste and soil from the disposal pits and surrounding area on the now-vacant property, currently owned by Towne Realty. This work was followed in 1998 by additional excavation and off-site disposal of more than 170,000 tons of waste, debris and contaminated soil from the ravine, lake bluff and upland area. Cleanup continued in spring 2004 when two small areas of soil were excavated and erosion control measures were put in place on the slope to the lake. In 2005, the upland area was regraded and reseeded to improve drainage. Eroded areas on the east slope were filled with soil. In 2006, a small area of subsurface soil in the upland area was treated to neutralize remaining chemicals. Groundwater will be monitored over the next few years to confirm that any leftover chemicals remain at safe levels. U.S. EPA expects that work on Towne's property will be

complete in 2007. U.S. EPA is waiting until spring 2007, at the earliest, to determine if further work is required to insure the stability of the recently re-graded upland and slope or in the replanted wetlands.

The extensive excavation on the 13-acre parcel was necessary because it contained much higher levels of contamination than the condominium property and was feasible because there were no buildings in place. The vacant 13-acre parcel has been cleaned to levels that would permit unrestricted use of the property (consistent with applicable zoning). In a settlement with U.S. EPA, the property owner has agreed to accept any use restrictions required by U.S. EPA in order to assure protection of human health and the environment. At the present time, U.S. EPA expects that the only requirements will be: (1) continued access to and protection of the monitoring wells; (2) no installation or use of groundwater wells, and that the wetlands at the eastern border of the property be maintained.

II. QUESTIONS ABOUT POSSIBLE DAMAGE THAT COULD RESULT FROM THE CLEANUP ACTION

The commenters had concerns about the chemicals that would be used in the final response action and whether the chemicals would pose any potential threats to either people or the environment, in particular plantings north of buildings 1 and 2 and a tree located within a small green-space within the parking area. Additionally, they expressed the concern that chemical injections into the ground might pose a general environmental hazard.

Response: It is unlikely that BiOx, the chemical that will be used in the proposed cleanup, will cause any damage to vegetation at the property because it will be injected below the reach of the root systems of the plants. The chemical is a highly dilute solution of hydrogen peroxide and the injection boreholes are roughly the diameter of a quarter. During the BiOx pilot study in late 2004, there was no evidence of damage to vegetation. The same chemical and method of injection will be used one more time in this final response action. The final round of injections will cover a smaller surface area than the pilot test. The final response action will be performed by a group of potentially responsible parties (the Performing Parties), who will need to obtain access from the Marina Cliffs Condominium Association in order to do this work. In the access agreement covering the 2004 pilot studies, the Performing Parties agreed to address potential and actual damage at the property caused by the work. U.S. EPA anticipates that the Condominium Association's new access agreement would also include provisions to address property damage resulting from the work.

The injections will be done under a U.S. EPA-approved health and safety plan. Any health and safety plan that would meet U.S. EPA approval must include provisions to prevent exposure of harmful chemicals to both workers implementing the BiOx injections and people near the work area. Adherence to the plan would prevent exposure of chemicals to residents of the property and to the surrounding environment.

III. ACCESS AGREEMENT

The aforementioned concerns about restoration of damaged vegetation also fall into the category of access agreement issues. The commenters made general statements about property access issues. Their comments pertained to both the access agreement that must be made between the Performing Parties and the Condo Association and to the existing agreement between the Association and Towne Realty. The latter agreement allows for a pedestrian access, usable by the association, to Lake Michigan through the Towne Realty property.

Response: U.S. EPA understands that the residents of the property have a settlement agreement with Towne Realty that assures them of an easement for beach access. The cleanup of that property, as discussed in Section I, will not interfere with or limit that easement. As discussed in Section II, the Performing Parties will be required to obtain the necessary access agreements to perform the final response actions at the condominium property. U.S. EPA would expect the Performing Parties to take reasonable steps to address the residents' concerns in order to obtain access.

IV. QUESTION ABOUT PUBLIC HEARING

One of the commenters asked why U.S. EPA was holding a public hearing when the proposed cleanup would be taking place on private land.

Response: U.S. EPA held a public hearing in order that the views of private residents could be *formally* solicited and considered in the response selection process and so that these opinions and questions could be made a part of the administrative record for this site. Because the final cleanup decision has a significant impact on the owners of the property, U.S. EPA wanted to provide an open forum for them to ask questions and make comments.

V. CONCERNS ABOUT POSSIBLE DEED RESTRICTIONS ON THE PROPERTY

Both commenters expressed concern about potential deed restrictions on the Marina Cliffs Condominium Association property and how they would affect property values of individual residential units.

Response: Safety to residents and utility workers is a high priority for U.S. EPA. As such, it may be necessary for the Agency to require deed restrictions to protect individuals who dig deep into soil containing contaminants. U.S. EPA will not be able to determine if deed restrictions will be required for the association property until completion of the soil testing associated with the BiOx injections. If the chemical injections result in a sufficient drop in contamination levels, deed restrictions may not be required for the property.

If necessary, the deed restrictions would require that construction or utility workers have and follow a health and safety plan for any deep excavation work. Such a plan would likely include the requirement that workers wear the appropriate personal protective equipment to prevent exposure to volatile organic compounds. U.S. EPA anticipates that the BiOx injections may achieve a sufficient level of reduction in VOCs so that the contamination would no longer

present an unacceptable risk to utility workers. In that case, deed restrictions would not be necessary.

WDNR will be placing the site on the Wisconsin Geographic Information System (GIS) registry – a computerized mapping system -- of contaminated sites. This will make information about contaminant levels available to the public, including any potential construction or utility workers that may conduct work at the site. Additionally, U.S. EPA will require the performing parties to provide direct notice to the utility companies about the contamination levels at the condominium property.

Finally, it is important to note that there is not a threat posed to the residences in the condo buildings and no remaining surface contamination at the Site. This should help alleviate any potential property value concerns.

VI. CONCERN ABOUT NOTIFICATION TO CONTRACTORS

One commenter wanted to know who would be responsible for notifying potential contractors of any special health and safety requirements. The commenter explained that the condo association has had contractors conduct work on the drain tiles in the basements of at least one unit. The commenter wanted to know if, in the future, it would be the responsibility of the condo association to notify the contractors about the health risk posed by the soil.

Response: As it would be the association hiring the contractors to address the drain tiles, it would be the responsibility of the association to notify the contractor about the risks, if any, posed by the soil. The utility companies would have been provided with notice directly, and through the Wisconsin GIS database, as described in Section V.

ATTACHMENT IV

ENFORCEMENT ADDENDUM

1 PAGE

THIS ATTACHMENT HAS BEEN REDACTED

NOT RELEVANT TO THE SELECTION OF THE REMOVAL ACTION